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# [12] 实用新型专利说明书

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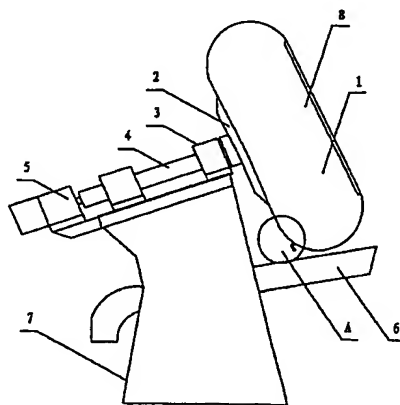
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[54] 实用新型名称 立式裹壳机

[57] 摘要

本实用新型属于使物料颗粒化的设备，尤其涉及在旋转罐内使物料成球的立式裹壳机。包括设置  
在主轴顶端的滚筒体，驱动主轴运转的电机和支撑  
主轴与滚筒体的机架，其特征是主轴的中心线与水  
平面的夹角小于  $80^\circ$ ；滚筒体底部与主轴联接；滚  
筒开口端设置压缩空气喷头、粘结剂喷头以及粉体  
输送装置；滚筒体下设置接料槽。本实用新型的优  
点是：立式安装，占地面积小，节约场地和人力；  
驱动电机采用可调速直流电机，可根据需要进行无  
级调速。



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1.一种立式裹壳机，包括设置在主轴顶端的滚筒体，驱动主轴运转的电机和支撑主轴与滚筒体的机架，其特征是主轴的中心线与水平面的夹角小于  $80^{\circ}$ ；滚筒体底部与主轴联接；滚筒开口端设置压缩空气喷头、粘结剂喷头以及粉体输送装置；滚筒体下设置接料槽。

2.按照权利要求1所述的立式裹壳机，其特征是滚筒体底部通过联轴器与主轴联接。

3.按照权利要求1所述的立式裹壳机，其特征是设置在主轴尾端的驱动电机，是可调速的直流减速电机，电机通过万向节与主轴联接。

4.按照权利要求1所述的立式裹壳机，其特征是设置在主轴一侧的驱动电机，是直流调速电机，电机通过蜗轮蜗杆与主轴联接。

5.按照权利要求1所述的立式裹壳机，其特征是粉体输送装置是螺旋输送单元、传送带输送单元或振动输送单元。

6.按照权利要求1所述的立式裹壳机，其特征是滚筒体下部设置放料口，在放料口的一侧，设置旋转把手和与之相连的活动旋片，活动旋片与滚筒体的弧度相匹配。

## 立式裹壳机

## 技术领域

本实用新型属于使物料颗粒化的设备，尤其涉及在旋转罐内使物料成球的立式裹壳机。

## 背景技术

现有技术的成球机是卧式结构，由电机通过皮带传动，驱动旋转罐使物料粘结、裹覆、颗粒化。其不足是占地面积大，转速调节不便。

**实用新型内容** 本实用新型的目的是设计一种占地面积小，转速可调节的立式裹壳机。

本实用新型是通过如下技术方案实施的：设计一种立式裹壳机，包括设置在主轴顶端的滚筒体，驱动主轴运转的电机和支撑主轴与滚筒体的机架，其特征是主轴的中心线与水平面的夹角小于 $80^{\circ}$ ；滚筒体底部通过联轴器与主轴联接；滚筒体设置压缩空气喷头、粘结剂喷头以及粉体输送装置；滚筒体下设置接料槽。

其滚筒体的主轴中心线与水平面的夹角可为 $20\pm 5^{\circ}$ ；其驱动主轴运转的电机是可调速的直流减速电机，设置在主轴尾端，通过万向节与主轴联接；驱动主轴运转的电机是直流调速电机，设置在主轴一侧，通过蜗轮蜗杆与主轴联接；粉体输送部件是螺旋输送装置或振动输送装置；其滚筒体下部设置通孔，配置弧度相等的活动旋片，构成启闭式放料阀。

本实用新型的优点是：立式安装，占地面积小，节约场地和人力；驱动电机采用可调速直流电机，可根据需要进行无级调速。

**附图说明** 图1是本实用新型一个实施例的结构示意图；图2是图1的A部局部放大示意图；图3是联机作业时的平面布置示意图。

## 具体实施方式

图中，轴承座3将主轴4电机5固定在机座体7上，电机5为直流调速电机，功率在800~3500 KW，视需要选择；主轴4通过联轴法兰2一端与滚筒体1联接，另一端通过万向节与电机5联接；滚筒体的主轴中心线与水平面的夹角为 $20\pm 5^{\circ}$ 为佳。滚筒体1下设置接料槽6，制成的半成品颗粒，通过接料槽6进入下工序。滚筒体下部设置放料口9，在放料口9的一侧，设置旋转把手11和与之相连的活动旋片10，活动旋片10与滚筒体1的弧度相匹配，通过转动把手11，带动旋片10转动，可以将放料口9开启或关闭，从而构成启闭式放料阀。

滚筒开口端8设置可调节的压缩空气喷头、粘结剂喷头以及粉体输送装置；根据不同产品要求，可以任意分别调节风、粘结剂和粉体的量。可制造各种规格、材质的粉体裹壳产品，提高原料利用率。

联机作业时，可以裹壳机12成排、分列布置；空压机15、物料贮仓16通管各列机位；各机位制成的载体半成品通过接料槽6进入纵向输送带13，经过横向输送带14送至下工序；两列机位间可设置轻轨18，其上有载着操作人员的控制车17往返。

本实用新型适用于以粉体为工质的包覆颗粒的制备，特别是在制备氧化铝、氧化锆、氧化镁等非粘土成分的，纯系以粉料裹壳为半成品的生产工艺中。

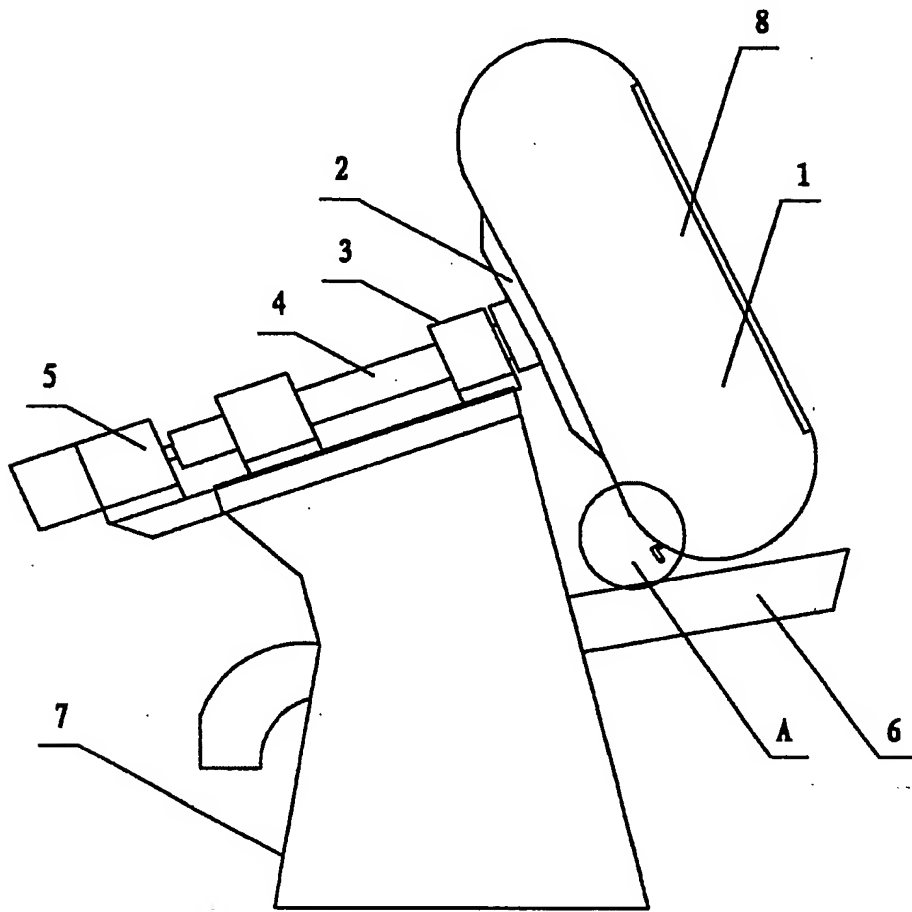


图 1

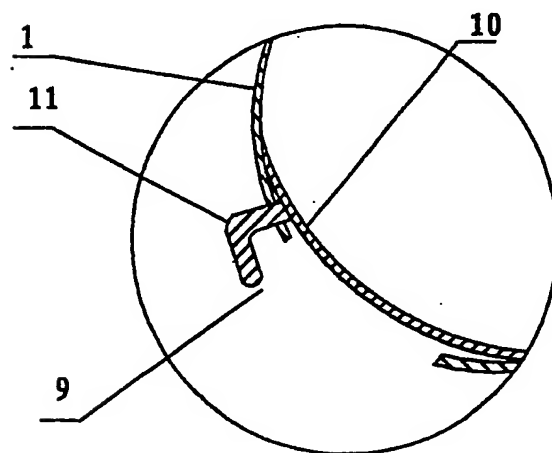


图 2

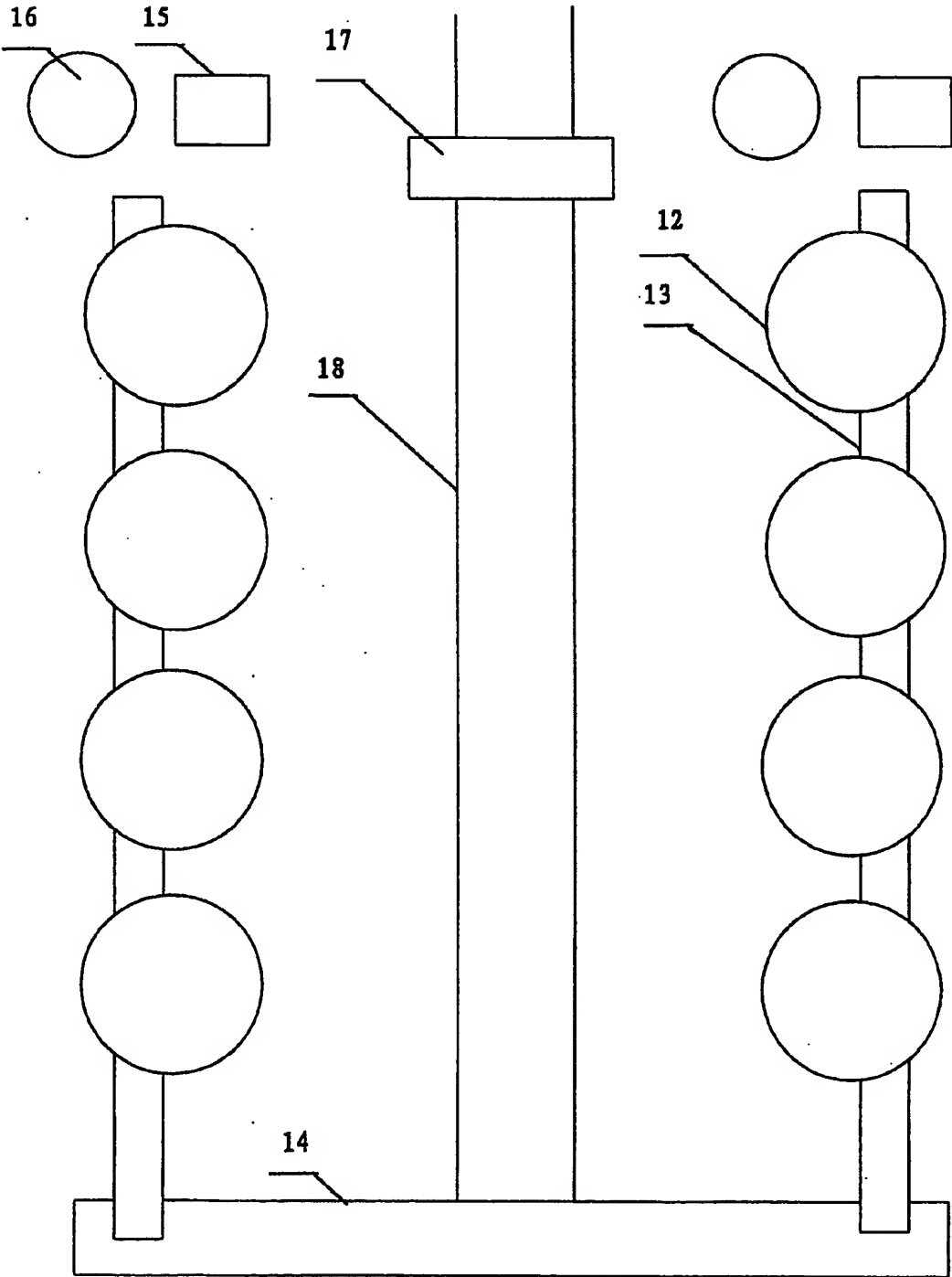


图 3

## The vertical shell machine of wrapping up in

### The technical field

This utility model belongs to the equipment that makes the material miniaturation, especially relates to the vertical shell machine of wrapping up in that makes the material balling-up at rotatory in-tank.

### The background art

The granulator of prior art is the horizontal type structure, by the motor through the belt transmission, rotatory jar of drive make a material bond, wrap up in cover, the miniaturation. It is not enough to be that the floor space is big, and the rotational speed is adjusted inconveniently.

The purpose of this utility model of utility model content is that to design a floor space little, the adjustable vertical shell machine of wrapping up in of rotational speed.

This utility model is implemented through following technical scheme: design the vertical shell machine of wrapping up in, including the barrel of setting on the main shaft top, drives the motor of main shaft operation and the frame that supports main shaft and barrel, characterized in that the central line of main shaft and the contained angle of horizontal plane are lighter than 80; The barrel bottom is through shaft coupling and main shaft hookup; The barrel sets up compressed air shower nozzle, binder shower nozzle and powder transport; The barrel sets up down and connects the silo.

The alignment of shafts line of its barrel can be for 20 5 with the contained angle of horizontal plane; The motor of its drive main shaft operation is the direct current reducing motor of adjustable speed, sets up at the main shaft tail end, through universal joint and main shaft hookup; The motor of drive main shaft operation is the direct current buncher, sets up in main shaft one side, through worm wheel worm and main shaft hookup; Parts are carried to the powder is auger delivery device or vibration transport; Its barrel lower part sets up the through-hole, and the equal movable vortex sheet of configuration radian constitutes and opens and close the formula baiting valve.

The advantage of this utility model is: vertical installation, and the floor space is little, practices thrift place and manpower; The driving motor adopts the adjustable speed direct current generator, can carry out stepless speed regulation as required.

Description drawings Fig. 1 is the structural representation of an embodiment of this utility model; Fig. 2 is the A portion fractionated gain sketch map of Fig. 1; Horizontal layout sketch map when Fig. 3 is the on-line-job.

### The detailed description of the invention

In the picture, bearing frame 3 is fixed 4 motors 5 on the main shaft on the frame body 7, and motor 5 be the direct current buncher, and power is at 800 to 3500KW, and it needs the selection to look; Main shaft 4 passes through universal joint and 5 hookups in the motor through 2 one end of shaft coupling flange and 1 hookup of barrel, the other end; The alignment of shafts line of barrel is 20 5 for good with the contained angle of horizontal plane. 1 time setting of barrel connects silo 6, and the semi-manufactured goods granule of making gets into process down through connecing silo 6. The barrel lower part sets up drain hole 9, in one side of drain hole 9, and the movable vortex sheet 10 that sets up rotatory handle 11 and link to each other with it, the radian phase-match

of activity vortex sheet 10 and barrel 1 through rotating handle 11, drives vortex sheet 10 and rotates, can open drain hole 9 or close, thereby the formula baiting valve is opened and close to the component.

Cylinder open end 8 sets up adjustable compressed air shower nozzle, binder shower nozzle and powder transport; According to different product requirements, the volume that can adjust wind, binder and powder wantonly respectively. The shell product is wrapped up in to the powder that can make various specifications, material, improves the raw materials utilization ratio.

During the on-line-job, can wrap up in 12 in banks in the shell machine, the apportion is arranged; Each is listed as the seat in the plane air compressor machine 15,16 siphunculuss of material bunker; The carrier semi-manufactured goods that made each seat in the plane are through connecing silo 6 to get into vertical conveyer belt 13, and the process is delivered to down in process cross feed area 14; Two are listed as the seat in the plane can set up light rail 18 within a definite time, has the control car 17 that wears operating personnel to come and go on it.

This utility model is applicable to and uses the powder as the preparation of the cladding granule of working medium, and especially at non- clay compositions such as preparation aluminium oxide, zirconia, magnesium oxide, pure lines use the powder to wrap up in the shell for in half-finished production technology.

## Claim

1. the vertical shell machine of wrapping up in including the barrel of setting on the main shaft top, drives the motor of main shaft operation and the frame that supports main shaft and barrel, characterized in that the central line of main shaft and the contained angle of horizontal plane are lighter than 80; Barrel bottom and main shaft hookup; The cylinder open end sets up compressed air shower nozzle, binder shower nozzle and powder transport; The barrel sets up down and connects the silo.
2. according to the said vertical shell machine of wrapping up in of claim 1, characterized in that the barrel bottom is through shaft coupling and main shaft hookup.
3. it is the direct current reducing motor of adjustable speed according to the said vertical shell machine of wrapping up in of claim 1, to characterized in setting up the driving motor at the main shaft tail end, and the motor passes through universal joint and main shaft hookup.
4. it is the direct current buncher according to the said vertical shell machine of wrapping up in of claim 1, to characterized in setting up the driving motor in main shaft one side, and the motor passes through worm wheel worm and main shaft hookup.
5. according to the said vertical shell machine of wrapping up in of claim 1, characterized in that the powder transport that the unit is carried in auger delivery unit, conveyer belt transport unit or vibration.
6. according to the said vertical shell machine of wrapping up in of claim 1, characterized in that the barrel lower part sets up the drain hole, in one side of drain hole, the movable vortex sheet that sets up rotatory handle and link to each other with it, the radian phase-match of activity vortex sheet and barrel.

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